

REMARKS

This paper is responsive to non-final Office Action dated November 13, 2003. Claims 1-59 were examined. Claims 27-31 and 44-48 stand rejected under 35 U.S.C. § 112, second paragraph. Claims 1-6, 8-11, 25-32, 34, 35, 38-45, 47, 48, 54, and 56-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No 6,370,148 to Calvignac et al. in view of U.S. Patent No. 5,835,491 to Davis et al. Claims 12-15, 23, 24, 49, 51, and 52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and further in view of U.S. Patent No. 6,449,283 to Chao et al. Claims 7, 36, 37, and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and further in view of U.S. Patent No. 5,301,279 to Riley et al. Claims 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and Chao and further in view of Riley. Claims 33 and 55 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and further in view of U.S. Patent No. 4,760,521 to Rehwald et al. Claim 46 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and further in view of U.S. Patent No. 6,069,573 to Clark, II et al. Claims 22 and 53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis, Chao, and Riley and further in view of U.S. Patent No. 6,029,217 to Arimilli et al.

Information Disclosure Statement

Applicants respectfully request the Examiner to consider references AR, AS, and AT, cited on page 4 of the Information Disclosure Statement form 1449, dated September 7, 2000, and return an initialed copy of the form 1449. Copies of these references were submitted with the form 1449, as indicated by the return postcard dated, September 12, 2000. However, for the Examiner's convenience additional copies of these references and a copy of the Form 1449 filed on September 7, 2000 are provided with this communication.

Rejections Under 35 U.S.C. § 112, second paragraph

Claims 27-31 and 44-48 stand rejected under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 27, the Office Action states that "it is unclear who the requesters are providing the priority indications to and how a bus, which is

known in the art as merely a transport mechanism, can perform a ‘combining’ function.” Applicants respectfully maintain that it is clear who the requesters are providing the priority indications to, because claim 22 depends from claim 2, which recites:

the requesters supplying respective requester priority indications to at least the one resource.

Applicants respectfully maintain that it is clear how a bus can perform a combining function. “Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure...” See MPEP § 2173.02. The combining function is described at least in FIG. 17 and related portions of the specification. Accordingly, Applicants respectfully request that the rejection of claim 27 under 35 U.S.C. § 112, second paragraph, and all claims dependent thereon, be withdrawn.

Regarding claim 41, the Office Action states that “it is unclear who the requesters are providing the priority indications to and how a bus, which is known in the art as merely a transport mechanism, can perform a ‘combining’ function.” Applicants respectfully maintain that it is clear who the requesters are providing the priority indications to, because claim 44 depends from claim 43, which recites:

each requester requesting the requested resource respectively provides a requester priority indication to the requested resource.

Applicants respectfully maintain that it is clear how a bus can perform a combining function. “Definiteness of claim language must be analyzed, not in a vacuum, but in light of: (A) The content of the particular application disclosure...” See MPEP § 2173.02. The combining function is described at least in FIG. 17 and related portions of the specification. Accordingly, Applicants respectfully request that the rejection of claim 44 under 35 U.S.C. § 112, second paragraph, and all claims dependent thereon, be withdrawn.

Art Rejections Under 35 U.S.C. § 103(a)

Claims 1-6, 8-11, 25-32, 34, 35, 38-45, 47, 48, 54, and 56-59 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No 6,370,148 to Calvignac et al. in view of U.S. Patent No. 5,835,491 to Davis et al.

Claim 1 has been cancelled. Claim 2 has been amended to include limitations of claim 1. Applicants respectfully maintain that Calvignac, alone or in combination with Davis, fails to teach or suggest

requesters supplying respective requester priority indications to at least the one resource,

as recited by claim 2. Calvignac teaches an “arbiter for arbitrating requests by a plurality of first data processing units for access to a plurality of second data processing units interconnected by a switching system of a type in which at any time each first unit can only access one second unit and each second unit can only be accessed by one first unit.” (Col. 2, lines 21-26) Calvignac fails to teach that the requesters supply respective requester priority indications to at least the one resource. Davis fails to compensate for the shortcomings of Calvignac. Davis teaches “a method for arbitrating multicast packet access to destination output channels of a switching network with a reservation ring” (col. 2, lines 39-41), but nowhere does Davis mention that the requesters supply respective requester priority indications to at least the one resource, as required by claim 2. Thus, Calvignac, alone or in combination with Davis and other references of record, fails to teach or suggest the limitations recited in amended claim 2. Accordingly, Applicants respectfully request that the rejection of claim 2 and all claims dependent thereon, be withdrawn.

Claim 35 has been amended to include limitations of claim 36. Applicants respectfully maintain that Calvignac alone or in combination with Davis, fails to teach or suggest

means for selecting from among a plurality of grants according to resource priorities, the resource priorities being inversely related to the number of requests made for the respective resource,

as recited by amended claim 35. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Calvignac fails to teach selecting from among a plurality of grants according to resource priorities. Davis fails to compensate for the shortcomings of Calvignac. Davis teaches priority assigned to the input channels and a priority associated with multicast packets (col. 39, lines 30-41), but nowhere does Davis mention selecting from among a plurality of grants according to resource priorities, as recited by amended claim 35. Thus, Calvignac, alone or in combination with Davis and other references of record, fails to teach or suggest the limitations recited in amended claim 35. Accordingly, Applicants respectfully request that the rejection of claim 35 and all claims dependent thereon, be withdrawn.

Claim 40 has been amended to include limitations of claim 50. Applicants respectfully maintain that Calvignac alone or in combination with Davis, fails to teach or suggest

the requested resource is further coupled to provide an indication of resource priority, the resource priority being inversely related to a number of resource requests received by the requested resource,

as recited by amended claim 50. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Calvignac fails to teach coupling a requested resource to provide an indication of resource priority. Davis fails to compensate for the shortcomings of Calvignac. Davis teaches priority assigned to the input channels and a priority associated with multicast packets (col. 39, lines 30-41), but nowhere does Davis mention coupling a requested resource to provide an indication of resource priority, as recited by amended claim 40. Thus, Calvignac, alone or in combination with Davis and other references of record, fails to teach or suggest the limitations recited in amended claim 40. Accordingly, Applicants respectfully request that the rejection of claim 40 and all claims dependent thereon, be withdrawn.

Claim 56 has been amended to recite

a third instruction sequence executable to supply from the requesters, respective requester priority indications to at least the one resource.

Applicants respectfully maintain that Calvignac alone or in combination with Davis, fails to teach or suggest the limitations as recited in amended claim 56. Calvignac teaches an “arbiter for arbitrating requests by a plurality of first data processing units for access to a plurality of second data processing units interconnected by a switching system of a type in which at any time each first unit can only access one second unit and each second unit can only be accessed by one first unit.” (Col. 2, lines 21-26) Calvignac fails to teach that the requesters supply respective requester priority indications to at least the one resource. Davis fails to compensate for the shortcomings of Calvignac. Davis teaches “a method for arbitrating multicast packet access to destination output channels of a switching network with a reservation ring (col. 2, lines 39-41), but nowhere does Davis mention that the requesters supply respective requester priority indications to at least the one resource, as required by claim 56. Thus, Calvignac, alone or in combination with Davis and other references of record, fails to teach or suggest the limitations recited in amended claim 56. Accordingly, Applicants respectfully request that the rejection of claim 56 and all claims dependent thereon, be withdrawn.

Regarding claim 58, Applicants respectfully maintain that Calvignac alone or in combination with Davis, fails to teach or suggest

a second instruction sequence executable to accept one of the grants according to grant priorities, grant priorities being inversely related to a number of requests received by a resource,

as recited by claim 58. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Calvignac fails to teach accepting one of the grants according to grant priorities, grant priorities being inversely related to a number of requests received by a resource. Davis fails to compensate for the shortcomings of Calvignac. Davis teaches priority assigned to the input channels and a priority associated with multicast packets (col. 39, lines 30-41), but

nowhere does Davis mention, accepting one of the grants according to grant priorities, grant priorities being inversely related to a number of requests received by a resource as recited by claim 58. Thus, Calvignac, alone or in combination with Davis, fails to teach or suggest the limitations recited in claim 58. Accordingly, Applicants respectfully request that the rejection of claim 58 and all claims dependent thereon, be withdrawn.

Claims 12-15, 23, 24, 49, 51 and 52 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and further in view of U.S. Patent No. 6,449,283 to Chao et al. Claim 12 has been put in independent form and amended to include limitations of claim 16. Applicants respectfully maintain that Calvignac alone or in combination with Davis and Chao, fails to teach or suggest

the one resource sends a resource priority indication to the requester being granted its request, indicative of a number of requests received by the resource,

as recited by amended claim 12. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Davis teaches priority assigned to the input channels and a priority associated with multicast packets. (Col. 39, lines 30-41) Chao teaches an arbitration scheme that separately handles input selection and output contention resolution by two independent sets of round-robin arbiters. (Col. 12, lines 39-42) Nowhere does Calvignac, Davis, or Chao mention, a resource sending a resource priority indication to the requester being granted its request, indicative of a number of requests received by the resource as required by amended claim 12. Thus, Calvignac, alone or in combination with Davis and Chao and other references of record, fails to teach or suggest the limitations recited in amended claim 12. Accordingly, Applicants respectfully request that the rejection of claim 12 and all claims dependent thereon, be withdrawn.

Claims 7, 36, 37, and 50 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac in view of Davis and further in view of U.S. Patent No. 5,301,279 to Riley et al. Claim 36 was incorporated into claim 35. Regarding amended claim 35, Applicants respectfully maintain that Calvignac alone or in combination with Davis and Riley fails to teach or suggest

means for selecting from among a plurality of grants according to resource priorities, the resource priorities being inversely related to the number of requests made for the respective resource,

as recited by amended claim 35. The Office Action relies the peripheral devices of Riley (col. 7) to supply this teaching. This portion of Riley teaches that the peripheral devices residing on a shared peripheral bus may request DMA service simultaneously. The peripheral devices are requesters, not resources, as required by claim 35. Nowhere does Riley teach or suggest that the resource priorities are inversely related to the number of requests made for the respective resource. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Davis teaches priority assigned to the input channels and a priority associated with multicast packets. (Col. 39, lines 30-41). Calvignac and Davis fail to teach or suggest that resource priorities are inversely related to the number of requests made for the respective resource, as required by amended claim 35. Thus, Calvignac, alone or in combination with Davis and Riley and other references of record fails to teach or suggest the limitations recited in amended claim 35. Accordingly, Applicants respectfully request that the rejection of claim 35 and all claims dependent thereon, be withdrawn.

Claim 50 was incorporated into claim 40. Regarding amended claim 40, Applicants respectfully maintain that Calvignac alone or in combination with Davis and Riley fails to teach or suggest

wherein the requested resource is further coupled to provide an indication of resource priority, the resource priority being inversely related to a number of resource requests received by the requested resource.

The Office Action relies the peripheral devices of Riley (col. 7) to supply this teaching. This portion of Riley teaches that the peripheral devices residing on a shared peripheral bus may request DMA service simultaneously. The peripheral devices are requesters, not resources, as

required by claim 40. Nowhere does Riley teach or suggest that the resource priorities are inversely related to the number of requests made for the respective resource. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Davis teaches priority assigned to the input channels and a priority associated with multicast packets. (Col. 39, lines 30-41). Calvignac and Davis fail to teach or suggest that resource priorities are inversely related to the number of requests made for the respective resource, as required by amended claim 40. Thus, Calvignac, alone or in combination with Davis and Riley and other references of record fails to teach or suggest the limitations recited in amended claim 40. Accordingly, Applicants respectfully request that the rejection of claim 40 and all claims dependent thereon, be withdrawn.

Claims 16-21 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Calvignac, in view of Davis and Chao and further in view of Riley. Claim 17 has been put in independent form. Applicants respectfully maintain that Calvignac alone or in combination with Davis, Chao, and Riley fails to teach or suggest that

a requester selects from among a plurality of grants according to respective resource priorities associated with each granting resource, the respective resource priorities being inversely related to a number of requests made, respectively, for each granting resource,

as recited by claim 17. Calvignac teaches “using a priority mechanism which increases the probability of selection with the length of time a request is stored in the rearrangement storage means.” (Abstract) Davis teaches priority assigned to the input channels and a priority associated with multicast packets. (Col. 39, lines 30-41). Chao teaches an arbitration scheme that separately handles input selection and output contention resolution by two independent sets of round-robin arbiters. (Col. 12, lines 39-42) Riley teaches at col. 7, lines 28-45, that the peripheral devices residing on a shared peripheral bus may request DMA service simultaneously. The peripheral devices of Riley are requesters, not resources, as taught by claim 17. Nowhere

does Calvignac, Davis, Chao or Riley teach or suggest that resources are considered in an order determined according to resource priority. Thus, Calvignac, alone or in combination with Davis, Chao, and Riley and other references of record fails to teach or suggest the limitations recited in claim 17. Accordingly, Applicants respectfully request that the rejection of claim 17 and all claims dependent thereon, be withdrawn.

Claims 4-6, 8-10, 25, and 32- 34 have been amended to depend from claim 2.

In summary, claims 2-15, 17-35, 37-49, and 51-59 are in the case. Claims 1, 16, 36, and 50 have been cancelled. Claim 60 has been added. All claims are believed to be allowable over the art of record, and a Notice of Allowance to that effect is respectfully solicited. Nonetheless, if any issues remain that could be more efficiently handled by telephone, the Examiner is requested to call the undersigned at the number listed below.

CERTIFICATE OF MAILING OR TRANSMISSION

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Date

Respectfully submitted,



Nicole Teitler Cave, Reg. No. 54,021
Attorney for Applicant(s)
(512) 338-6315
(512) 338-6301 (fax)

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